

**REMARKS**

Applicants thank the Examiner for the thorough examination of the application. Claims 1-13 and 15-20 are pending. Claims 1, 4, 7-10, 13 and 16-18 are amended. Claims 1 and 10 are independent. Claim 14 is canceled without prejudice to or disclaimer of the subject matter contained therein. Claims 19 and 20 are added. Reconsideration of the present application, as amended, is respectfully requested.

**Drawings**

The revised formal drawings filed on February 21, 2003 have been approved by the Examiner. However, Applicants have not received a Notice of Draftsperson's Patent Drawing Review, Form PTO-948, indicating whether the formal drawings have been approved by the Official Draftsperson. It is respectfully submitted that the drawings comply with USPTO requirements. Clarification with the next official communication is respectfully requested.

**Objection to the Claims**

Claims 1, 4, 7-10, 13, 14 and 16-18 are objected to because of informalities. Claims 1, 4, 7-10, 13 and 16-18 are amended to overcome these informalities. Furthermore, claim 14 is canceled. Accordingly, it is respectfully requested that the objection to claims 1, 4, 7-10, 13, 14 and 16-18 be withdrawn.

**Rejection under 35 U.S.C. §103(a)**

Claims 1-3, 5, 6, 8, 10-12, 14, 15 and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,429,909 to Kim et al. in view of U.S. Patent No. 6,313,889 to Song et al. Claims 8 and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kim et al. in view of Song et al., and further in view of U.S. Patent No. 5,657,101 to Cheng. Claims 4, 7, 9, 13, 16 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kim et al. in view of Song et al., and further in view of U.S. Patent No. 5,734,450 to Irie et al. These rejections are respectfully traversed.

While not conceding the appropriateness of the rejections, but merely to advance prosecution of the instant application, independent claims 1 and 10 are amended to recite combinations of elements in a thin film transistor substrate in a liquid crystal display, including "a gate dummy pattern formed so as to extend vertically from the gate line ..., the gate dummy pattern being integrated with the gate line."

It is respectfully submitted that the combinations of elements set forth in independent claims 1 and 10 are not anticipated or rendered obvious by the art of record, including Kim et al., Song et al, Cheng or Irie et al.

Kim et al. discloses an LCD including a gate line 100, repair lines 110 and 120, a gate line 400, a gate-insulating film 200, a passivation film 500, and a pixel 600, as shown in FIGS. 6, 7, and 13. Contact holes C5-C8 are formed in the gate-

insulating film 200. Kim et al. does not teach or suggest a "a gate dummy pattern formed so as to extend vertically from the gate line, the gate dummy pattern being integrated with the gate line," as recited in claims 1 and 10.

The Office Action relies on Song et al. for a teaching of the use of a redundant pattern that is integrated with a gate line. Applicants respectfully traverse this interpretation of Song et al. In Song et al., a cross point between the data line D located above the disconnect point a of the data line D and the upper gate line  $G_{up}$  is shorted or the source electrode 7 and the gate electrode 2 are shorted, and then the upper gate line  $G_{up}$  located at the right of the short point b and the second horizontal portion  $G_{h2}$  are disconnected. As a result, the data signal flows toward the right auxiliary gate line 1b from the second vertical portion. However, nowhere does Song et al. disclose a gate dummy pattern integrated with a gate line. Therefore, Song et al. does not teach or suggest the above-cited limitation of claims 1 and 10, and fails to cure the deficiencies of Kim et al. with respect to these claims.

In rejecting claims 8 and 17, the Office Action relies on Cheng for a teaching of patterns made from a gate metal layer on both sides of a data line. Cheng discloses an LCD including storage electrode 52, gate insulator layer 43 and a data line 59 formed sequentially on a glass substrate, as shown in FIG. 5d. The storage electrode 52, which the Office Action appears to equate with the claimed "gate dummy pattern," is formed under each side of the data line 59. However, Cheng does not teach or suggest the above-cited limitation of claims 1 and 10 and,

therefore, fails to cure the deficiencies of Kim et al. and Song et al. with respect to the claims 1 and 10, incorporated in claims 8 and 17.

In rejecting claims 4, 7, 9, 13, 16 and 18, the Office Action relies on Irie et al. for a teaching of a recess in the dummy pattern. However, Irie et al. does not teach or suggest the above-cited limitation of claims 1 and 10 and, therefore, fails to cure the deficiencies of Kim et al. and Song et al. with respect to the claims 1 and 10, incorporated in claims 4, 7, 9, 13, 16 and 18.

In view of the foregoing, it is respectfully submitted that the applied prior art of record, including Kim et al., Song et al., Cheng and Irie et al., fails to teach or suggest the combinations of elements set forth in independent claims 1 and 10. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are respectfully requested. It is believed that claims 1 and 10 are allowable. Since the remaining claims depend from allowable claims, they are also allowable for at least the above reasons, as well as for the additional limitations provided thereby. Thus, all claims are allowable.

### **CONCLUSION**

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response

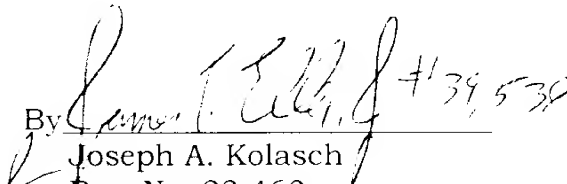
has been made to the outstanding Office Action, and that the present application is in condition for allowance.

However, if there are any outstanding issues, the Examiner is invited to telephone Sam Bhattacharya (Reg. No. 48,107) at (703) 205-8000 in an effort to expedite prosecution.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or to credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By  +139,538  
Joseph A. Kolasch  
Reg. No. 22,463

**2658-0240P**

JAK:SB:mmi:sld

P. O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000